CALIFORNIA'S RENEWABLES PORTFOLIO STANDARD



Implementing one of the most ambitious renewable energy standards in the country

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Presentation Overview

- Purpose of the Renewables Portfolio Program (RPS)
- RPS-eligibility and deliverability rules
- Renewable Energy Credits (RECs)
- RPS procurement process
- Project development barriers
- Current Status of 20% by 2010 target
- Cost containment
- Renewable Energy Transmission Initiative (RETI)

Overview of 20% RPS Program

RPS requires all retail energy sellers to procure 20% of retail sales in renewable energy by 2010

- Retail energy sellers must procure **20% renewable energy by 2010**
  - Original legislation (SB 1078, 2002) was 20% by 2017. Target accelerated to 2010, effective January, 2007 (SB 107, 2006)
  - All RPS-obligated retail sellers must procure an incremental 1% of retail sales per year until 2010
  - 20% obligation continues post-2010
- RPS procurement compliance is measured in terms of electricity deliveries, **not signed contracts**
- California has set itself a further goal of 33% by 2020

RPS Eligibility Guidelines

CEC determines eligibility and delivery rules in *RPS Eligibility Guidebook*

Eligible Resources

- Biodiesel
- Biomass
- Conduit hydroelectric
- Digester gas
- Fuel cells using renewable fuels
- Geothermal
- Wind
- Landfill gas
- Municipal solid waste
- Ocean wave, ocean thermal, tidal current
- Photovoltaic
- Small hydroelectric (30 MW or less)
- Solar thermal electric
- Hydroelectric (incremental generation from efficiency improvements

RPS Deliverability Guidelines

- RPS Delivery Rules
  - Energy from facilities located in the WECC, but not connected to California grid, must be delivered into California
  - Energy can be consumed by any California consumer, IOUs may remarket
  - CAISO requires out-of-state facilities to firm and shape intermittent energy (e.g. wind, solar) to deliver into California
- Out-of-state renewable generators must:
  - Comply with same eligibility rules as in-state resources
  - Be located in the WECC (western U.S. and parts of Canada/Mexico)
  - Not cause or contribute to the violation of a CA environmental law
  - Commence operation after January 1, 2005

Renewable Energy Credits (REC)

REC trading is potentially an additional procurement option – not currently allowed

- A REC represents all of the renewable attributes associated with one megawatt-hour of eligible renewable energy generation
  - Currently, retail sellers must sign power purchase agreements for renewable energy + RECs (i.e., bundled contracts)
  - The REC is an accounting instrument used to verify RPS compliance
- SB107 authorized (not mandated) CPUC to allow unbundled/tradable RECs to be used for RPS compliance.
  - CPUC issued proposed REC trading decision October 29, 2008
  - Issue of out-of-state REC trading is being revisited in AB 64 and SB 14

RPS Procurement Process

CPUC approves RPS procurement plans → **IOUs hold annual solicitation** → **IOU rank bids pursuant to "least-cost, best-fit" methodology** → **IOUs negotiate bids, execute contracts**

- Independent evaluator oversees solicitation, bid evaluation, and negotiations
- Bilateral contracts (negotiated outside of a competitive solicitation) are also eligible

Once the IOU executes contract, must submit to the CPUC for approval

RPS Contract Approval Process

CPUC reviews contracts for price reasonableness, and project viability, consistency with CPUC decisions

- Price reasonableness
  - Per se reasonable at or below ‘market price referent’ (MPR)
  - Bid supply curves for recent solicitation, technology
- Project viability
  - Technology, financing, permitting, transmission, developer experience
- CPUC decisions
  - Emissions performance standard
  - Minimum quota for long-term and new RPS contracts
  - Utility procurement plan

Status of RPS Procurement

870 megawatts (MW) of renewable energy has come online since the start of RPS program

- CPUC has approved 112 contracts for nearly 7,000 MW of new and existing eligible renewable energy capacity
  - Of these, 73 are projects with new capacity, totaling 5,245 MW
- More than 500 MW of new generating capacity completed construction in 2008, representing 60% of total new capacity installed since 2003.
- Recent RPS solicitations have been robust:
  - Increased participation from larger and more experienced developers
  - IOUs shortlisting 10x their incremental procurement targets
  - California renewable market is maturing
- Renewable procurement process is working

Project Development Barriers

CPUC identifies and ranks the development barriers for each approved RPS project…there are many

- Significant project development barriers:
  - Transmission
  - Project financing
- Other project development barriers:
  - Developer experience
  - Permitting (CEC and county)
  - Technology maturity (commercialized vs. emerging)
  - Site control (e.g., BLM application process)
  - Fuel supply (e.g., insufficient biomass fuel)
  - Equipment procurement (e.g., wind turbines)
  - Military radar

Current Status of 20% RPS

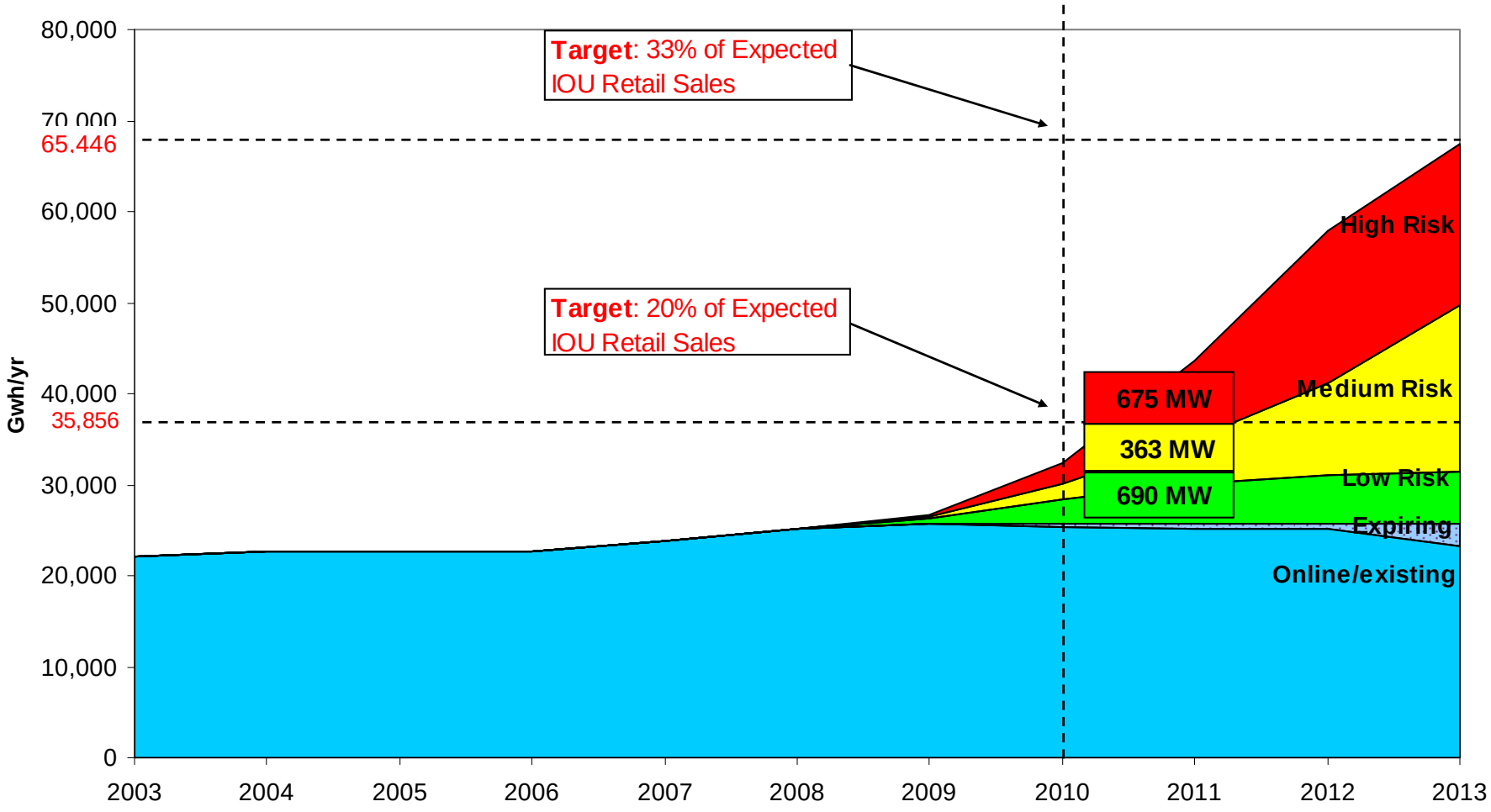
If we successfully remove development barriers, may hit 20% by 2013

- Only 7 years to achieve the 60% increase in RPS generation needed to reach 33%

		2003	2004	2005	2006	2007	2008 (estimate)
PG&E	RPS Eligible GWh	8,828	8,575	8,543	9,114	9,047	10,275
	RPS GWh as % of bundled sales	12.4%	11.6%	11.7%	11.9%	11.4%	12.9%
SCE	RPS Eligible GWh	12,613	13,248	12,930	12,706	12,465	12,754
	RPS GWh as % of bundled sales	17.9%	18.2%	17.2%	16.1%	15.7%	16.0%
SDG&E	RPS Eligible GWh	550	678	825	900	881	1,071
	RPS GWh as % of bundled sales	3.7%	4.3%	5.2%	5.3%	5.2%	6.3%
TOTAL	RPS Eligible GWh	21,991	22,500	22,298	22,719	22,393	24,100
	RPS GWh as % of bundled sales	14.0%	13.9% ↓	13.6% ↓	13.2% ↓	12.7% ↑	13.7% ↑

Numbers in **red** represent year-on-year decreases in GWh or % terms

Risk Assessment of Forecasted RPS Generation



RPS Cost Containment Mechanism

Statute requires a limitation on the total costs of RPS procurement above fossil prices

- Pursuant to statute, CPUC calculates the Market Price Referent (MPR) each year
  - MPR represents the presumptive cost of building and operating a combined cycle gas turbine power plant (CCGT) under a long-term contract
  - RPS contracts at or below MPR will be considered per se reasonable, and can be recovered in rates
- Each IOU can expend a certain amount of money above the MPR
  - Pursuant to statute, CPUC can approve above-MPR contract costs, for recovery in rates, up to a cost limitation (roughly $770 million total for the 3 large IOUs)
  - If the cost limitation is exhausted, IOUs *can* limit RPS procurement to renewable energy resources that can be procured at or below the MPR

Renewable Energy Transmission Initiative (RETI)

RETI is proactive transmission planning for 33% RPS

- The Renewable Energy Transmission Initiative (RETI) is a statewide initiative to help identify the transmission projects needed to accommodate California's renewable energy goals.
- RETI will assess all competitive renewable energy zones in California, and possibly neighboring states.
- RETI will identify those zones that can be developed in the most cost effective and environmentally benign manner and will prepare detailed transmission plans for those zones.
- Utilizes a rigorous stakeholder process.
  - IOUs, CEC, CAISO, MUNIs, renewable developers, military, Farm Bureau, and indian tribes etc.

Renewable Energy Transmission Initiative (RETI)

RETI has 3 phases – first 2 phases nearly complete

- **Phase I – Completed**
  - Report ranks competitive renewable resource zones (CREZs) through stakeholder consensus to reflect commercial potential, economic potential, and environmental restrictions
- **Phase 2 – Draft report by March 2009**
  - Conceptual transmission plans for the highest ranking CREZs
- **Phase 3 – 4th Quarter 2009**
  - Transmission plans of service that result in applications to construct new transmission infrastructure to meet RPS goals
- More information:
  - http://www.energy.ca.gov/reti/

More information

CPUC RPS Website:

www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy/

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